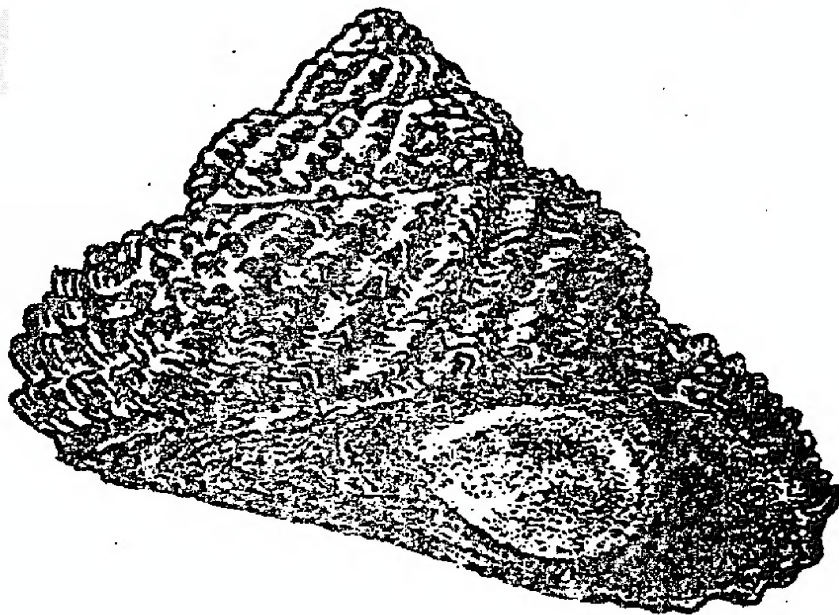


COOKIA



Journal of the Wellington Shell Club
New Zealand

Vol 4

No 1

SEPT. 1980

SHELLS OF THE COOK VOYAGES

The voyages of discovery of Captain James Cook were spread over a period of twelve years from 20 August 1768, when the "Endeavour" sailed from Plymouth, to 4 October 1780, when the "Resolution" and "Discovery" anchored at The Nore.

In September 1969, at the time of the bicentennial celebrations of Cook's landing in New Zealand, we published in our Bulletin No 20, two articles relative to the subject ... "The New Zealand Shells in the Collection of Joseph Banks" and "Astraea heliotropium in History and Literature". In the intervening years a quantity of information has become available on the shell collecting done on the Cook voyages, and as we are now at the bicentenary of the conclusion of those journeys it is an appropriate time to discuss some of the more detailed information now available on the voyages as they affected New Zealand conchology.

Shell collecting received very few references in the journals of either Captain Cook or Joseph Banks. Bank's own interest was mainly in botany, and Solander, who probably did more shell collecting than either of them, apparently did not compile a journal, or in fact any written account of his experience on the "Endeavour".

Much of what follows is based on a paper by S. Peter Dance entitled "The Cook Voyages and Conchology" (Journal of Conchology Vol 26, 1971, and a supplementary note in Vol 27, 1972).

In this paper Dance included lists of shells collected on Cook's voyages at various places round the world. The following is the list of species collected in New Zealand. The original nomenclature was "disentangled" by Dr R.K. Dell, and has, for the present purposes, been further amended to current usage.

Haliotis virginea Gmelin
Haliotis iris Gmelin
Cellana radians (Gmelin)
Cellana denticulata (Martyn)
Cellana stellifera (Gmelin)
Maurea pellucida (Valenciennes)
Maurea punctulata (Martyn)
Maurea selecta (Dillwyn)
Trochus viridis Gmelin
Melagraphia aethiops (Gmelin)
Cantharidus opalus (Martyn)
Cantharidus purpureus (Gmelin)
Turbo smaragdus Gmelin
Turbo granosus (Martyn)
Astraea heliotropium (Martyn)
Cookia sulcata (Gmelin)
Nerita atramentosa Reeve
Struthiolaria papulosa (Martyn)
Struthiolaria vermis (Martyn)
Monoplex parthenopeus (Salis)
Haustrum haustorium (Gmelin)
Thais orbita (Gmelin)
Lepsithais lacunosus (Bruguiere)
Austrofuscus glans (Roding)
Cominella maculosa (Martyn)
Cominella adspersa (Bruguiere)
Buccinum lineum (Martyn)
Alcithoe arabica (Gmelin)
Amphibola crenata (Gmelin)
Modiolarca impacta (Hermann)

Perna canaliculus (Gmelin)
Aulacomya ater maoriana (Iredale)
Chione stutchburyi Wood
Notirus reflexus (Gray)
Paphies australis (Gmelin)

Of this list of 35 species, only *Monoplex parthenopeus* is believed to have been known to European scientists prior to collection in New Zealand.

Shells collected on the Cook voyages went into the hands of various British and European dealers and scientists. It appears that the first publication to illustrate and describe any of the shells collected on Cook's voyages was a paper in the German journal "Der Naturforscher" in 1774. This was by J.E.I. Walch, and included an illustration which appears to be *Cantharidus purpureus*, making this species the first New Zealand shell to have been pictured in print. The next year, 1775, also in "Der Naturforscher", an article appeared by F.A. Zorn von Plobsheim on shells collected on the first or second expedition, which included an illustration of *Turbo smaragdus*, which takes second place in the history of the illustration of New Zealand shells. In 1776, in the same German periodical, was an article by L. Spengler on Cook expedition shells with illustrations of *Cookia sulcata* and *Maurea punctulata*. It also included a picture of *Pyrasmus ebeninus* (the large mud whelk of eastern Australia) and this appears to be the earliest picturisation of an Australian species of mollusc.

It is noteworthy that the three publications referred to were of German origin, and all prior to Thomas Martyn's "Universal Conchologist" in 1784. Presumably shells from the Cook voyages were well dispersed on the continent before any English scientists set pen to paper about them.

NEW ZEALAND FOSSIL AND LIVING TONNACEA

By Dr Alan Beu
New Zealand Geological Survey

The list below includes all the members of the gastropod Superfamily Tonnacea (families Tonnidae, Cassidae, Ficidae, Bursidae, Cymatiidae) that have been recorded as Cenozoic fossils in New Zealand or, to my knowledge, occur in the living fauna of the New Zealand region (from Macquarie Island to the Three Kings Rise). In most cases, the names used are the result of my 15 years research on this superfamily, and after my recent visits to the major Northern Hemisphere museums, they are the names I think will become stable for these species. For instance, the bewildering array of European Tertiary species of Sassia (sensu stricto) includes many forms similar to Austrosassia and some other groups named from the Southern Hemisphere, and there's no doubt that in the long run we are going to have to accept that Austrosassia is simply a synonym of Sassia. A few other changes of this sort will probably occur in the future, but the names will mostly be stable now as presented here. The one genus where I have no doubt that the specific names are not finalised is Tonna, where the research on Linnaeus' and Lamarck's types has still to be done; I list here what seem to be the most likely to be finally adopted names.

Many of the name changes from recent lists of New Zealand fossils (Fleming 1966) and shells (Powell 1979) have been published in the papers listed at the end, but many others are unpublished. As the names used will be unfamiliar to some readers, I have included some of the more familiar synonyms. In the living fauna, 6 taxa are included that seem unlikely to be living and breeding consistently in the New Zealand area, or that occur only to the north (Distorsio lewisi) or to the south (Sassia kampa tomlini) of the main islands of New Zealand; these 6 taxa are marked with an asterisk (*).

Superfamily TONNACEA

Family CASSIDAE
(spelling: ICZN Opinion 1023)

Subfamily CASSINAE

Genus Morum Röding, 1798

Subgenus Oniscidia Morch, 1852 (valid, ICZN Opinion 1040)

Morum (Oniscidia) bruuni (Powell, 1958), Recent (1 record, Bay of Plenty, National Museum)

finlayi (Laws, 1932), Miocene

harpaforme Powell & Bartrum, 1929, Miocene

Genus Galeodea Link, 1807

Subgenus Galeodea sensu stricto

Galeodea (Galeodea) apodometes Marwick, 1934, Miocene

geniculosa Marwick, 1942, Eocene

modesta (Suter, 1917), Eocene

? senex (Hutton, 1873), indeterminate

triganceae Dell, 1953, Recent

n.sp., Miocene, Clifden

Subgenus Galeocorys Kuroda & Habe, 1957

Galeodea (Galeocorys) sulcata (Hutton, 1873), late Miocene & Pliocene
cf. sulcata, Pleistocene & Recent (1 record, N.Z. Oceanographic
Institute).

wylliei Marwick, 1931, Miocene
n.sp., Miocene, N. Taranaki

Subgenus Taieria Finlay & Marwick, 1937

Galeodea (Taieria) allani (Finlay & Marwick, 1937), Paleocene

Subfamily PHALIINAE Beu, in press

Genus Semicassis Murch, 1852

(= Xenophalium, Xenogalea, Tylocassis, etc.)

Semicassis ? ericana (Powell, 1928) (status unclear, only 1-2 shells
known), Recent

labiata (Perry, 1811) (= collocata, insperata, ecological forms)
Pleistocene & Recent

pyrum (Lamarck, 1822) (= abernethyi, hamiltoni, harrisonae, finlayi,
matai, stadialis, etc.), Pleistocene-Recent

royana (Iredale, 1914), Recent

thomsoni (Brazier, 1875), Recent

Genus Casmaria H. & A. Adams, 1853

Casmaria perryi (Iredale, 1912), Recent

Genus Echinophoria Sacco, 1890

Subgenus Echinophoria sensu stricto

Echinophoria (Echinophoria) emilyae (Laws, 1932), Miocene

grangei (Marwick, 1926), Miocene

multinodosa (Powell, 1928), Miocene

oconnori (Dell, 1952), Miocene

oneroaensis (Powell, 1938), Miocene

pollens (Finlay, 1926) (= muricata Hector

= hectori Abbott), Miocene

toreuma (Powell, 1928), Miocene

Subgenus Kahua Marwick, 1928 (= Mauicassis Fleming, 1943)

Echinophoria (Kahua) fibrata (Marshall & Murdoch, 1920), Pliocene

kaawaensis (Bartrum & Powell, 1928), Pliocene

lilliei (Fleming, 1943), late Pliocene

marwicki (Fleming, 1943), late Pliocene

skinneri (Marwick, 1928), Pliocene

Family TONNIDAE

Subfamily TONNINAE

Genus Tonna Brunnich, 1772

Tonna cerevisina Hedley, 1919 (= haurakiensis), Recent

cumingi (Reeve, 1849) (= maoria), Recent

fasciata tetracotula Hedley, 1919, Recent

* luteostoma (Küster, 1857) (record possibly based on unusual shells
of cerevisina), Recent

melanostoma (Jay, 1839), Recent

* perdix (Linne, 1758), Recent

tessellata (Lamarck, 1816) (= maculata), Recent

zonata (Green, 1830) (= clearium, not of Linné), Pleistocene & Recent.

Genus Eudolium Dall, 1889

Eudolium aoteanum Beu, 1970, Miocene
pyriforme (G.B. Sowerby III, 1914), Recent
 n.sp., Miocene

Genus Malea Valenciennes, 1832

Subgenus Quimalea Iredale, 1929

* Malea (Quimalea) pomum (Linné, 1758), Recent

Subfamily OOCORYTHINAE

Genus Oocorys Fischer, 1883

Oocorys cf. sulcata Fischer, 1883, Recent (specimens in N.Z. Oceanographic Institute)

Family FICIDAE

Genus Ficus Röding, 1798

Ficus altispira (Pritchard, 1896) (= imperfecta Marshall & Murdoch),
 Oligocene & Miocene
parvus Suter, 1917, Eocene
 n.sp., Oligocene, Waitaki Valley
 n.sp., Miocene, Clifden

Genus Priscoficus Conrad, 1866

Priscoficus alectodens Marwick, 1942, Eocene
allani Marwick, 1960, Eocene

Genus Proficus Finlay & Marwick, 1937

Proficus obtusus (Marshall, 1917), Paleocene)

Genus Thalassocyon Barnard, 1960

Thalassocyon tui Dell, 1967, Recent

Family CYMATIIDAE

Subfamily CYMATIINAE

Genus Cymatium Röding, 1798

Subgenus Septa Perry, 1810 (= Cabestanimorpha, Monoplex, etc.)

Cymatium (Septa) exaratum exaratum (Reeve, 1844) (= tabulata of authors,
 not of Menke), Pleistocene & Recent
parthenopeum parthenopeum (von Salis Marschlins, 1793) (= Monoplex
australasiae), Pleistocene and Recent

Subgenus Turritriton Dall, 1904 (= Tritoniscus, Particymatium)

Cymatium (Turritriton) labiosus (Wood, 1828) (= strangei), Recent

Subfamily CHARONIINAE

Genus Charonia Gistel, 1847

Charonia lampas rubicunda (Perry, 1811) (= capax, euclioides), Pleistocene
 & Recent

* tritonis tritonis (Linné, 1758), Recent

Genus Cabestana Röding, 1798

Cabestana spengleri (Perry, 1811) (= bolteniana, barthelemyi, etc.),
Pleistocene & Recent

tabulata tabulata (Menke, 1843) (= waterhousei, segregata, debilior,
otagoensis, etc.), Pleistocene & Recent

tabulata manawatuna Fleming, 1943, late Miocene & Pliocene
tetleyi (Powell & Bartrum, 1929), Miocene

Genus Sassia Bellardi, 1873

Subgenus Sassia sensu stricto (= Austrosassia, Cymatona, Phanozesta,
Proxicharonia, etc.)

Sassia (s.s.) cyphoides (Finlay, 1924), Eocene

decagonia (Finlay, 1924), Eocene

kampyla kampyla (Watson, 1885), Recent

kampyla jobbernsi (King, 1933), Pliocene

* kampyla tomlini (Powell, 1955), Recent, Macquarie Island

maoria (Finlay, 1924) (= insignita), Miocene

nassariformis remensa (Iredale, 1936), Recent

neozelanica neozelanica (Marshall & Murdoch, 1923), Miocene

neozelanica arthritica (Powell & Bartrum, 1929), Miocene

neozelanica clifdenensis (Finlay, 1924), Miocene

neozelanica palmeri (Powell, 1976), Recent

pahaoaensis (Vella, 1954), Miocene

parkinsonia (Perry, 1811), Pleistocene & Recent

procera (Finlay, 1931), Oligocene

pusulosa (Marwick, 1965), Pliocene

tortirostris (Tate, 1888) (= morgani, octoserrata), Oligocene &
Miocene

zealta (Laws, 1939), Miocene

several n.spp., Paleocene to Miocene

Subgenus Haurokoa Fleming, 1955

Sassia (Haurokoa) bartrumi (Powell, 1938), Miocene

marwicki (Finlay, 1924) (= sculpturata), Eocene

woodi (Fleming, 1955), Miocene & early Pliocene

3 n.spp., Oligocene & Miocene

Subfamily RANELLINAE

This name will change, and Ranella itself will probably be suppressed, as the name Ranellidae is considerably earlier than Cymatiidae, although it was originally based on the generic concept now called Bursa; application to ICZN now being compiled).

Genus Argobuccinum Hermannsenn, 1846

Argobuccinum pustulosum tumidum (Dunker, 1862), Pleistocene & Recent

Genus Fusitriton Cossmann, 1903

Fusitriton magellanicus laudandus Finlay, 1927, Recent

Genus Ranella Lamarck, 1816 (= Mayena)

Ranella australasia australasia (Perry, 1811), late Miocene, and Pleistocene to Recent (= blacki, vossi, etc.)

kaiparaensis (Finlay, 1924), Miocene

olearia (Linné, 1758) (= gigantea, multinodosa, etc.), Recent

Subfamily DISTORSIONINAE

Genus Distorsio Röding, 1798Subgenus Distorsionella Beu, 1978* Distorsio (Distorsionella) lewisi Beu, 1978, Recent, north of N.Z.Subgenus Personella Conrad, 1865Distorsio (Personella) beui Maxwell, 1968, EoceneFamily BURSIDAEGenus Bursa Röding, 1798Subgenus Bufonariella Thiele, 1929Bursa (Bufonariella) verrucosa (G.B. Sowerby I, 1825), RecentGenus Tutufa Jousseaume, 1881Subgenus Tutufa sensu strictoTutufa (Tutufa) bufo (Röding, 1798) (= lissostoma), RecentBibliographyAbbott, R.T. 1968: The helmet shells of the world (Cassidae). Part 1.
Indo-Pacific Mollusca 2(9): 15-202.Beu, A.G. 1969: The gastropod genus Thalassocyron Barnard, 1960.
N.Z. J1 mar. Freshwat. Res. 3(3): 445-52.——— 1971: Some synonymies in the mollusca family Cymatiidae.
J1 Malac. Soc. Aust. 2(2): 101-11.——— 1976a: New records of Cymatiidae (Gastropoda: Prosobranchia)
from Kapitean to Castlecliffian rocks of East Cape district, New
Zealand. N.Z. J1 geol. Geophys. 19(2): 297-310.——— 1976b: Arrival of Semicassis pyrum (Lamarck) and other tonnacean
gastropods in the Southern Ocean during Pleistocene time. J1 R. Soc.
N.Z. 6(4): 413-32.——— 1978: New records and species of Cymatiidae (Gastropoda: Prosobranchia)
from the Kermadec Islands, Norfolk Ridge and New Zealand. J1 Malac. Soc.
Aust. 4: 29-42.——— 1980: Australian gastropods of the Family Bursidae. Part 1. The
families of Tonnacea, the genera of Bursidae, and revision of the species
previously assigned to Tutufa Jousseaume, 1881. Rec. Aust. Mus., in
press.Fleming, C.A. 1966: Marwick's illustrations of New Zealand shells, with a
checklist of New Zealand Cenozoic Mollusca. N.Z. Dept. Scient. Ind.
Res. Bull. 173: 456 pls., 145 pls.International Commission on Zoological Nomenclature, 1974: Opinion 1023.
Cassidae (Mollusca) and Cassidinae (Insecta): placed on the Official
List of Family-group Names in Zoology. Bull. zool. Nom. 31: 127-9.——— 1975: Opinion 1040.
Oniscidia Morch, 1852 (Mollusca): placed on the Official List. Bull.
zool. Nom. 32: 139-40.

International Commission on Zoological Nomenclature, 1977: Opinion 1074.
Murex rana bubo Linnaeus, 1758, designated as the type-species of
Tutufa Jousseaume, 1881 (Gastropoda). Bull. zool. Nom. 33: 174-5.

Maxwell, P.A. 1968: Distorsio (Personella) boui n.sp., a new species of the
Cymatiidae (Gastropoda) from the Upper Eocene of New Zealand. Trans. R.
Soc. N.Z. Geology 6(10): 133-7.

————— 1978: Taxonomic and nomenclatural notes on some New Zealand
Cenozoic Mollusca, with descriptions of new taxa. N.Z. J1 zool. 5: 15-46.

Powell, A.W.B. 1979: "New Zealand Mollusca. Marine, land and freshwater
shells". Collins, Auckland Sydney & London, 500 pp., 82 pls., 120 figs.

GARI LINEOLATA ----- TWO SPECIES

Under the assumption that all their specimens are *Gari lineolata*, many New Zealand shell collectors have in fact been collecting two species for many years.

Dr R.C. Willan has recently researched this species and published his results in a paper entitled "A Re-evaluation of *Gari lineolata* (Gray in Yate 1835)" in the Journal of the Royal Society of N.Z. Vol 10 No 2, 1980.

Dr Willan has separated from *Gari lineolata* a new species which bears the name *Gari hodgei* Willan 1980. Both species occur throughout New Zealand, and have co-existed since the Pliocene.

The distinctions between the two species are set out in tabular form as follows:-

<u>hodgei</u>	<u>lineolata</u>
<u>Sculpture on right valve</u>	
Prominent ridge extending from umbo to posterior margins of valve. Posterior slope with raised lirae.	Shell with a weak ridge or lacking one. Posterior slope smooth.
<u>Posterior margin</u>	
Shell tapering posteriorly, margin angled.	Shell rounded posteriorly, broader there than at anterior end.
<u>Radial colour rays</u>	
Present.	Absent.
<u>Pallial sinus</u>	
Extending in front of umbones, U-shaped. Ratio of shell length to sinus depth between 1.50 and 1.64.	Just reaching level of umbones, upper limb of sinus descends rapidly to pallial line. Ratio of shell length to sinus depth between 1.67 and 1.85.
<u>Umbo</u>	
Towards posterior end of shell, particularly so in large shells.	Central.
<u>Maximum size</u>	
85 mm.	60 mm.

Readers should check the material in their collections, and it is fairly certain many will find that they have been harbouring both species under the name of *Gari lineolata*. They can now separate out their shells and add an additional species to their collections.

SOME LAND SNAIL HABITATS

By R.R. SUDLOW

Ever gone land snail hunting? It sure bears reflection! I have been collecting land snails from around Sunny Grove, Wainuiomata for 3 years and have personally collected 30 different species from 16 genera in the surrounding bush. These are: Allodiscus planulatus, A. tessellatus, "Charopa" buccinella, "C." brouni, Charopa bianca, "Charopa colensoi", Charopa coma, "Charopa" biconcava, Charopa "anguicula", Huonodon pseudoleioda, Cytora lignaria, Flammulina perdita, Huonodon hectori, H. microundulata, Laoma mariae, "Subfectola caput-spinulae", Laoma marina, Omphalorissa purchasi, Paralaoma "pumila", Phenacohelix lucetta, P. pilula, Phenacharopa novoseelandica, Laoma ariel, Laoma lateumbilicata, Laoma n.sp. 29, Laoma miserabilis, Thalassohelix zelandiae, Therasiella neozelanica, Sutera ide and Rhytida (Wainuia) urnula.

With every live snail found I noted where it had come from and have made these conclusions about where some of them live:

Allodiscus planulatus. It has been found living on Asplenium flaccidum on the sides of trees and under logs in very damp conditions.

Allodiscus tessellatus. Likes "ferny" areas and I have found it crawling across spider webs at night.

"Charopa" buccinella. Has been found living under a small piece of punga on leaf litter, and around the roots of a large totara; fairly damp.

"Charopa colensoi". Likes rocky and loamy areas in scrubby bush, under logs and stones.

"Charopa" biconcava. Under rocks in mossy areas and near the roots of totara.

Huonodon pseudoleioda. Among growths on the side of totara, in very damp conditions.

Flammulina perdita. In very damp areas. Two live specimens were found on wet sacking behind backyard shed on rotting wood (near bush).

Laoma marina. Has been found crawling on the fronds of Blechnum capense, in scrubby bush, after heavy rain.

Laoma mariae. Usually on leaf litter and under logs in scrubby bush, damp conditions.

Omphalorissa purchasi. Around ferns and in leaf litter around ferns; very damp conditions.

Paralaoma "pumila". Likes exposed conditions. Under rocks, logs, and leaf litter, mainly rocks. This appears to be a very hardy animal, and recent researches show that it probably has a wide global distribution.

Phenacohelix lucetta. Found in leaf litter and on Brachyglottis repanda at night; damp conditions.

Phenacohelix pilula. At base of totara, around roots and crawling on moss on the sides of trees at night.

Phenacharopa novoseelandica. Mostly found under bark of decaying tree trunks (generally Nothofagus sp.) but I have found a colony of approx. 20 on a nikau palm frond base; damp conditions.

Thalassohelix zelandiae. Has been found on Brachyglottis repanda foliage at night, and around the bases of trees, under logs, and in caverns formed by tree roots during the day; damp conditions.

Sutaria ide. Commonly found under logs and leaf litter by day and on tree ferns, dirt banks and logs at night. In light bush and in fairly damp conditions.

Rhytida (Wainuia) urnula. I have only once come across live specimens (under rocks in an overgrown river bed) but dead shells can be found in most places especially around punga, under boulders and under logs; in slightly damp conditions. (NB: some of these may only apply to this particular area).

When snail hunting you should be careful not to damage the habitat you are working in too much and to put back boulders and logs. You should also be careful not to kill live specimens unless they are really needed.

MARINE SHELLS COLLECTED AT NORFOLK ISLAND.

By W.J. Paul

This list of marine shells collected at Norfolk Island has been compiled from several sources.

Mrs E. Andrews made a collection there in December 1979.

The author collected at Norfolk Island in July 1980.

Lists were compiled of the contents of these two collections. Mrs N. Gardner and Mrs J. Coles were at Norfolk Island in December 1978, and published in "Poirieria" (Vol 10 Pt 3 Aug 1979) a list of species collected or observed there. As an addition to their list they also gave the names of several species not seen by them but present in the collection of Mrs F. Bunce.

While at Norfolk Island I saw a collection of shells at the home of Mrs M. Hoare. This collection was the result of twenty years collecting by her daughter, Mrs A. Burke, now of Bathurst, New South Wales. This contained many species not seen by any of the above mentioned collectors.

An inspection of the Norfolk Island shells in the National Museum has enabled the inclusion of a few further species names. The Museum has a considerable quantity of minute shells of which no study has been made to date. When this material is classified a substantial addition will be made to the present list.

To a New Zealand collector examining Norfolk Island beaches there are some very obvious gaps in the fauna. No patellid limpets have been found; there are no Haliotis; and no chitons apparent on the rocks. Mrs Gardner recorded one small unidentified chiton in her list.

Three species dominate the intertidal ecological pattern ... *Nerita atramentosa* is exceedingly common; *Hinea braziliiana* is present in thousands on and under boulders; and *Siphonaria normalis* almost entirely covers many large boulders. Very few bivalve shells can be collected, mostly broken single valves.

Gastropoda

Amblychilepas sp.
Puncturella sp.
Diodora foveolata Garrett
Calliotrochus symbolicus alter Iredale
Minopa sp.
Herpetopoma scabriuscula Adams & Angas
Gena auricula illusa Iredale
Fautor sp.
Nerita atramentosa Reeve
Nerita plicata Linne
Nerita albicilla Linne
Royella sinon Bayle
Cerithiopsis (?) sp.
Bembicium melanostoma Gmelin
Rissoina tornatilis Gould
Rissoina 2 sp.
Merelina sp.
Serpulorbis sp.
Siliquaria weldii Tenison-Woods
Siliquaria ponderosa Morch
Hinea braziliiana Lamarck
Balcis articulata Sowerby

Strombus mutabilis Swainson
 Strombus gibberulus gibbosus Roding
 Strombus luhuanus Linne
 Capulus liberatus Pease
 Hipponyx conicus Schumacher
 Hipponyx foliaceus Quoy & Gaimard
 Cypraea caputserpentis Linne
 Cypraea ursellus Gmelin
 Cypraea poraria Linne
 Cypraea assellus Linne
 Cypraea moneta Linne
 Cypraea isabella Linne
 Cypraea annulus Linne
 Cypraea walkeri Sowerby
 Cypraea cernica Sowerby
 Cypraea vitellus Linne
 Trivirostra oryza Lamarck
 Natica cf. sagittata Menke
 Natica onca Roding
 Natica gualteriana Reeve
 Natica 2 sp.
 Mammilla melanostomus Gmelin
 Mammilla simiae Deshayes
 Tonna perdix Linne
 Tonna cerevisina Hedley
 Tonna cepa Roding
 Bursa granularis Roding
 Bursa verrucosa Sowerby
 Turritriton tabulata Menke
 Pterotyphis angasi Crosse
 Thais orbita Gmelin
 Thais tuberosa Roding
 Thais aculeata Deshayes
 Drupa ricinus Linne
 Drupa morum Roding
 Morula uva Roding
 Morula spinosa Adams
 Morula biconica Blainville
 Morula granulata Duclos
 Morula chaidea Duclos
 Agnewia tritoniformis Blainville
 Nassa sarta Bruguiere
 Neothais smithi Brazier
 Pyrene flava Bruguiere
 Pyrene scripta Lamarck
 Pyrene testudinaria Link
 Pyrene 2 sp.
 Nassarius pauperus Gould
 Nassarius spiratus Adams
 Nassarius gaudiosus Hinds
 Cominella norfolkensis Iredale
 Cantharus undosus Linne
 Crassicantharus norfolkensis Ponder
 Lyria nucleus Lamarck
 Mitra carbonaria Swainson
 Austromitra sp.
 Marginella pacifica Pease
 Marginella sp.
 Philbertia nexa Reeve
 Turridae ... 2 sp.

Conus coronatus Gmelin
Conus ebraeus Linne
Conus chaldaeus Roding
Conus miliaris Hwass
Conus sponsalis Hwass
Conus parvulus Link
Conus flavidus Lamarck
Conus figulinus Linne
Janthina janthina Linne
Janthina exigua Lamarck
Epitonium pallasii Kiener
Epitonium sp.
Architectonica reevei Hanley
Philippia lutea Lamarck
Philippia radiata Roding
Heliacus variegatus Gmelin
Heliacus asperus Hinds
Heliacus dorsuosus Hinds
Triphora (?) sp.
Pyramidellidae 2 sp.
Hydatina physis Linne
Aplustrum amplustre Linne
Bullina lineata Gray
Bulla angasi Pilsbry
Bulla vernicosa Gould
Bulla ampulla Linne
Acteon virgatus Reeve
Retusa sp.
Umbraculum sinicum Gmelin
Aplysia parvula Guilding
Melampus luteus Quoy & Gaimard
Melampus castanea Muehlfoldt
Siphonaria normalis Gould
Gadinea conica Angas

Bivalvia

Acar cf. *sandersonae* Powell
Barbatia cf. *velata* Sowerby
Modiolus auriculatus Krauss
Septifer vertagus Wiegman
Melina ephippium Linne
Pinctada maculata Gould
Chlamys asperrimoides Powell
Chlamys senatoria Gmelin
Plicatula cf. *essingtonensis* Sowerby
Limaria orientalis Adams & Reeve
Saccostrea cucullata Born
Chama pacifica Broderip
Lentillaria paytenorum Iredale
Cardita variegata Bruguiere
Fragum unedo Linne
Cardium sp.
Placamen foliacea Philippi
Lacolina quoyi Sowerby
Scutarcopagia scobinata Linne
Atactodea striata Gmelin

Cephalopoda

Spirula spirula Linne
 Argonauta nodosa Lightfoot
 Nautilus macromphalus Sowerby

Amphineura

1 small sp.

The Family Placement of the Genus Angaria.

Shell collectors have generally accepted the placement of this genus (popularly called dolphin shells) in the Family Trochidae, on the grounds of the presence of a horny operculum.

One of the principal criteria in the distinction between Trochidae and Turbinidae is the presence of a horny operculum in the former, and a calcareous one in the latter.

It is interesting to note the comments of some authors on the question of the true relationship of the genus.

Dr D.F. McMichael in "Queensland and Barrier Reef Shells" ...

"The family falls between the Trochidae (which it resembles in possessing a horny operculum) and the Turbinidae (which it resembles more in shell characters)."

Dr B.R. Wilson in "Australian Shells" ...

"Members of this Genus are often mistaken for turban shells but the round horny operculum shows them to be trochids."

A.P.H. Oliver in "The Hamlyn Guide to Shells of the World" ...

"The genus Angaria have the thin opercula of Trochidae but are included by some with the Turbinidae."

In a paper entitled "The Trochidae and Turbinidae of the Kermadec Ridge", published in the N.Z. Journal of Zoology Vol 6, 1979, Mr B.A. Marshall of the National Museum has recorded the presence of *Angaria delphinus* at the Kermadec Islands, and has clarified the familial relationship of the Genus as follows ...

"Angaria is customarily referred to Trochidae rather than Turbinidae on account of its horny instead of calcareous operculum. However, all other hard parts are essentially turbinid in character; the adult and early teleoconch facies resemble those of Astracinae; the protoconch sculpture resembles that of Homalopomatinae at least; and the radula resembles those of Turbinidae in general. Consequently I have no hesitation in referring Angariinae to Turbinidae as an atypical, perhaps archaic, group in which the operculum is not calcified."

So we should now accept Angaria (the well known dolphin shells) as a genus with a horny operculum in the Family Turbinidae.

Mr Marshall has further commented that the 15 or so names at present used in the genus will probably after further study all be treated as synonyms of *Angaria delphinus* Linne 1758.

Some authors in the past have neatly by-passed the problem of the real relationship of Angaria by erecting a separate family, Angariidae.

GENERIC NAMES USED IN BOTH BOTANY AND CONCHOLOGY

Further to the article in the last issue of "Cookia", Mrs F. Duguid has forwarded some additional notes.

Stellaria ... New Zealand bristles with botanical ones.

Three common widespread naturalised weeds ...

Stellaria alsine ... bog stitchwort

Stellaria graminea ... stitchwort

Stellaria media ... chickweed

There are six small native species and one variety, mostly alpine or sub-antarctic of distribution, but one, *Stellaria parvifolia*, is a widespread low-land plant of shaded places in the North Island, South Island, Stewart Island and the Chathams.

Crassula ... In addition to the cultivated ornamental plants in New Zealand there is a plentiful small weed of roadsides and gravelly places, *Crassula decumbens* (Cape *Crassula*) native of South Africa. It is a short-lived annual conspicuous when dying off, the long lines of multitudes of plants taking on a pinkish orange glow.

Reflections of Wellington's one and only full-time fossil whale cleaner.

By Claire Clark

Early in 1980 I commenced to prepare a large Oligocene whale which has lain for several years in boxes, crates and plaster-cast monoliths in the Whale Basement of the National Museum, Wellington.

The animal swam the oceans of the world approximately 35 million years ago before expiring upon the sea bed. In the sheltered waters his bones dis-aggregated and shifted slightly as flesh and cartilage decomposed. They became the playground for scuttling crabs and home for oysters, worms and barnacles. Eddying currents swept broken shell strewn on the sea floor into the recesses of jumbled ribs and limbs and empty skull. With the passage of time the bones were covered with sediment and finally elevated above sea level. In 1971 they were discovered in a hillside near Sisters Creek, South Canterbury. Earthworms, not to be outdone by their marine ancestors had wriggled over, under, and even into soft corroded bone surfaces.

Using paint brushes, the bones were exposed and cleaned by Graeme Mason, Don Gregg and Frank Climo. Plaster jackets, strengthened in one instance by a metal fence batten conveniently to hand, were placed around the more massive blocks which were then crated to Wellington.

Over the past few months I have prized open the plaster casts and scratched at the matrix with dental probes to reveal a magnificent collection of skull bones, ear bones, rostrum, ribs and vertebrae. It was a new world for an invertebrate devotee and I was quite baffled in my efforts to identify emerging bones. Even so, this whale needed to be a rare breed to accommodate the "third" ear bone I have attributed to it.

At times when the scratching developed a monotonous rhythm lulling me to sleep, my dental probe would invariably slip deeper into the matrix exposing a new soft pale pink surface - instant promise of yet another bone below the first. Excitement would stir my interest and alert the eye. Even at night the whale could successfully leave me sleepless as I would be haunted by visions of bones crumbling in my hands, glued joints bending and probes gouging man-made foramina.

By day my progress is watched by many eyes - all large and liquid-brown from the same drawer in the Taxidermy Department. They grace elands, wapiti, a stag, wart hog, moose and wolves which hang above my head in the basement. The dolphin and whale skeletons are sightless and disinterested. But a fully-grown serval or wild cat calmly watches both the whale bones and the cleaner. I wonder which he craves - my jugular or a bone to gnaw. He may be stuffed but he could do with a square meal.

Glueing bones is a long and painstaking process. Ribs are curved and vertebrae are awkward cumbersome shapes which grow heavier as fragments are glued back into position. A strong precise bond takes an hour, which is far too long to sit nursing bones. Fortunately the skull of a Pliocene (younger) whale lies on a table close by. The skull has many indentations which provide perfect supports for irregular bones. Wads of cotton-wool and foam provide emergency landing pads for toppling bones - but that never happens in my sophisticated laboratory.

The saddest moment in a project such as this is to witness the clinical numbering and dismemberment of the bones into drawer-sized pieces. That mighty swimmer of the sea "ZMT 67" now lies cramped into allotted cabinet space. Fear of such an ignoble ending has been transmitted to the jaw bones which stubbornly resist my attempts to clean them. The shellac applied as a protective coating years ago rubs off only with difficulty and copious supplies of methylated spirits and elbow grease. The Whale Basement now smells like a school dental surgery, but the moths does kill the odour of freshly flensed or drying dolphins and fish.

In two months the project will be completed. "ZMT 67" will only come alive again if finance can be found for New Zealand's fossil whale expert to spend time examining and drooling over mandibles, maxillae, tympanic bullae and the

broken fragments known as whale spare parts

NOTES ON SOME AUSTRALIAN SHELLS IN NEW ZEALAND ----- continued

By W.J. Paul

16. *Ratifusus reticulatus* (A. Adams 1855)

For a description of this mollusc see Powell's "Manual" (1979) page 203, and illustration, plate 42.

In his "Shellfish of New Zealand" 1937, 1946 and 1958, and in his "Shells of New Zealand" 1962, Powell recorded this species as *Fusus mestayerae* Iredale 1915. In the fifth edition, 1976, the species is recorded as *Ratifusus reticulatus* (A. Adams 1855) and is transferred from the Family Fusidae to Buccinidae.

This shell is not common in New Zealand, occurring in a few places on the coast of Northland and has been dredged off Great Barrier Island, and is not in many private collections. In Australia it is found along the coast of Victoria and South Australia, and in Tasmania. It is not really uncommon and fairly frequently washed ashore.

From the buffeting it has had from genus to genus and from family to family in published records it must be about our most unfortunate mollusc. The following are notes of the treatment of the species in various New Zealand and Australian publications.

H. Suter "Manual of the New Zealand Mollusca" (1913)

In Family Buccinidae, *Pisania reticulata* A. Adams 1855, and said to be in New Zealand, New Caledonia, Australia and Tasmania.

W.L. May "An Illustrated Index of Tasmanian Shells" (1923)

Fusus mestayerae Iredale.

R.C. Kershaw "A Systematic List of the Mollusca of Tasmania" (1955)

Ratifusus mestayerae 1915, in Family Cymatiidae.

B.C. Cotton and F.K. Godfrey "A Systematic List of the Gastropoda of South and Central Australia" (1938).

Ratifusus reticulata A. Adams 1854, with New Caledonia quoted as type locality. (Note the error of date).
In Family Cymatiidae.

B.C. Cotton "South Australian Shells: (1957)

Ratifusus mestayerae 1915, synonym *Ratifusus reticulatus* Adams 1854 (Cotton has the date wrong again)

B.C. Cotton "South Australian Mollusca, Archaeogastropoda" (1959)

in the list of all South Australian gastropods,
Ratifusus mestayerae Iredale 1915, again quoting as a synonym, *reticulata* Adams 1854, and stating New South Wales as type locality.
In Family Cymatiidae.

J.H. Macpherson and E.H. Chapple "A Systematic List of the Marine and Estuarine Mollusca of Victoria" (1951).

Ratifusus reticulata A. Adams 1854 (they too have the date wrong).
In Family Cymatiidae.

B.C. Cotton "Publication No. 4, Malacological Society of Australia, Family Cymatiidae" (1957).

Ratifusus mestayerae Iredale 1915, with type locality quoted as New Caledonia, and *reticulata* Adams 1855 as a synonym (this time Cotton has the date right).

J.H. Macpherson "Port Phillip Survey, 1957-63, Mollusca" (1966)
 In the list of species not found during the survey,
 Family Cymatiidae
Ratifusus mestayerae (Iredale 1914) (Iredale's date wrongly given).

J. Allen "Australian Shells" (1950)

As was her practice in this volume, Joyce Allan made up a common name for this shell "Reticulated Little Buccinum", with the technical name *Ratifusus reticulata*, in Family Buccinidae.

T. Iredale and D.F. McMichael "A Reference List of the Marine Mollusca of New South Wales: (1962).

The species is not listed in this publication as it does not occur in New South Wales, the genus *Ratifusus* however is listed in the Family Colubrariidae. So that is where we would have found our shell if it lived in that State.

This is an almost unbelievable series of mixed species, genera, families and dates.

The real history is that A. Adams named the shell *Pisania reticulata* in 1855, and Suter used this name. In 1915 Iredale renamed it *Fusus mestayerae*. Powell continued the use of Iredale's name through to the fourth edition of his book. In the fifth edition he corrected it to *Ratifusus reticulata* Adams. In 1929, Iredale erected the genus *Ratifusus* based on *Ratifusus adjunctus*, a New South Wales species which has also been found in northern New Zealand. *Reticulatus* is very closely related to *adjunctus* and rightly falls within the definition of Iredale's genus. The species name *mestayerae* created by Iredale in 1915 was not necessary, it simply created a synonym of *reticulatus*.

So, through all this confusion of literature we can now stabilise the name of our shell as *Ratifusus reticulatus*.

The references to it being found at New Caledonia don't seem to have been confirmed.

17. *Latiaxis lischkeanus* (Dunker 1882)

This species, one of our most beautifully sculptured shells, has a special place in our New Zealand molluscan fauna as its area of distribution extends both north and south of the tropics in the Pacific.

Dunker originally applied the name *Rapana lischkeana* in 1882 to shells found in Japanese waters where the species lives in the area from about middle of the island of Honshu southwards through the Japanese islands and about Taiwan, generally in depths of 30-50 fathoms.

In 1947 Powell described a new species of mollusc found in northern New Zealand as *Tolema peregrina*, and he retained this name for it through to the fourth edition of his "Shells of New Zealand". On the other side of the Tasman in 1955 Laseron applied the name *Tolema australis* to a species, now known to be identical with *lischkeanus* Dunker, thereby straightening out a confusion which had arisen as to the type species of the genus *Tolema* which Iredale had erected in 1929.

Comparison of the three species - *lischkeanus* in Japan, *peregrina* in New Zealand, and *australis* in Australia - has shown that they are in fact identical, and that the correct name to be used is *lischkeanus*, for all of them.

A description of this widely distributed shell and an illustration of it are in Powell's "Manual" (1979).

From the comments of various writers in the three countries involved the habitat of the species appears to vary from quite shallow to quite deep water.

Powell refers to it as being found in 20 fathoms near Kawau Island, and at 180-310 fathoms off Alderman Islands.

The type of *australis* was collected at 110 fathoms off Sydney.

Along the coast of New South Wales specimens are commonly collected at about 60 fathoms.

In their "Marine Molluscs of Victoria", Macpherson and Gabriel quote the species as living at 16-20 fathoms off Lakes Entrance.

Kira states the habitat in Japanese waters to be 30-50 fathoms.

On the face of these figures it would appear to be of shallow water habitat about Japan and on the southern coast of Australia; is in deeper water off the eastern Australian coast; and in New Zealand reaches its greatest recorded depth.

The geographical range stretches from somewhere about the middle of the Japanese archipelago to about East Cape, New Zealand, and round the southern coast of Australia to possibly the eastern part of South Australia.

A Trip in West Nelson.

By M. Taylor

We decided to spend Easter 1980 with our son at Murchison. At that inland town collecting sea shells was of course out of the question, so we went to the Seddonville area in search of land snails. We were lucky on the banks of the Mohikinui River to find a few Paryphanta lignaria hybrids, casualties probably of recent floods.

High up on a ridge north of the river there were a lot of Paryphanta lignaria in very good condition ... in fact, beautiful shells. The country was very rugged, and only the fanatically enthusiastic would care to penetrate the dense pig-fern and bush-lawyers on hands and knees in search of snails in that area.

Our next collecting trip was to the hills behind Reefton, to Sankeys Creek, for fossils. On the way we observed a number of robins in the bush. We managed to collect some very good specimens of Alipunctifera kaihikuana, Triassic fossils 200 million years old.

After our fossil collecting trip we went back to the humble snails again. This time it was to the edge of the Abel Tasman National Park, along the Canaan Heights road. Here we found large specimens of Paryphanta hochstetteri, and were lucky enough to see some large colonies of live animals. Their main habitat was under rotting beech logs with a light covering of twigs. Strangely, none of the snails were actually clinging to the logs. Naturally we did not disturb them, but were very interested to see them in their natural surroundings, the shells being the same colour as the fallen beech leaves.

Here's hoping that next year we can again go down south and spend some time in the Seddonville area which seems to be well worthwhile visiting.

LAND SNAIL COUNT FROM 802 DIRT SAMPLE

5th May 1980

By P.R. SUDLOW

An 802 forest floor litter/dirt sample was taken from a site, at the base of a Mahoe tree, approximately 200m along the track following the stream from the end of the Sunny Grove Road, Wainuiomata. Species and quantities were:

<u>"Charopa" brouni</u>	1	
<u>"Charopa" buccinella</u>	4	+ 1 live specimen
<u>Charopa "anguicula"</u>	9	
<u>Huonodon microundulata</u>	5	
<u>Huonodon hectori</u>	3	
<u>Phenacohelix lucetta</u>	1	
<u>Phenacohelix pilula</u>	2	
<u>"Subfectola caputspinulae"</u>	13	+ 3 live specimens
<u>Therasiella neozelanica</u>	11	+ 1 live specimen
<u>Flammulina perdita</u>	3	
<u>Laoma mariae</u>	1	
<u>Laoma ariel</u>	4	
<u>Laoma lateumbilicata</u>	5	
<u>Laoma rimutaka</u>	8	
<u>Laoma n.sp.</u>	1	
<u>Omphalorissa purchasi</u>	100	(20% juvenile)
<u>Charopa species indet.</u>	3	
	179	

In the sample, the species range was not very great, but a good number of snails were present. Live specimens were returned to their habitat.
